

CLAIMS

What is claimed is:

1. A method for communicating optical data in a network, the method comprising:
 - transmitting an optical beam carrying data into a wireless pathway to a target receiver station;
 - detecting an attenuation of the optical beam; and
 - comparing the attenuation of the optical beam with an attenuation of another optical beam intended to be received by at least one reference receiver station in the network to determine a global blockage or local blockage of the pathway.
2. The method of claim 1, further including increasing the power of the optical beam transmitted if there is a global blockage.
3. The method of claim 1, further including reducing or maintaining the power of the optical beam transmitted if there is a local blockage.

4. The method of claim 3, further including repeating the detecting of an attenuation and comparing the attenuation, and incrementally increasing the power of the optical beam if there is no local blockage with each repetition, until the power reaches a network based optimal amount.
5. The method of claim 1, further including measuring backscatter as an indication of a local or global blockage.
6. The method of claim 5, wherein the transmitting of an optical beam is by pulsing and further including detecting backscatter only during an extended period of time corresponding to backscatter from a global blockage.
7. The method of claim 5, further including distinguishing backscatter from a fixed source, a local blockage, a distributed scattering source along the pathway, and the reference receiving station, by the measured amount of backscatter.
8. The method of claim 5, wherein the transmitted optical beam is partially modulated to distinguish between backscatter and other light.
9. The method of claim 1, further including detecting an attenuation of another optical beam intended to be received by a reference receiver station native to the transmitter station, prior to the detecting of an attenuation of the optical beam.

10. The method of claim 1, wherein the comparing is by a central station and further including the central station sending instructions to the transmitter station or target receiver station to adjust a system parameter according to whether the blockage is local or global.

11. A transmitter station comprising:

- a) a light source for generating an optical beam;
- b) a transmitter aperture for sending the optical beam into a wireless pathway to a target receiver station;
- c) a communication interface to receive information on the attenuation of the optical beam at the target receiver station and attenuation of another optical beam at a reference receiver station, as an indication of a local or global blockage of the pathway; and
- d) a power controller to increase the optical beam in if there is a global blockage or decrease or maintain the optical beam if there is a local blockage.

12. The device of claim 11, further including a monitor to measure backscatter of the optical beam from a blockage of the pathway, wherein the measured backscatter indicates a global blockage or a local blockage.

13. The device of claim 12, wherein the sending of the optical beam is by pulsing and the measuring of backscatter is only during an extended period of time corresponding to backscatter from a global blockage.
14. The device of claim 12, wherein the measuring backscatter further indicates backscatter from a local blockage or backscatter from the receiving station.
15. The device of claim 12, wherein the optical beam is partially modulated to distinguish between backscatter and other light.
16. The device of claim 11, wherein the communication interface receives instructions to adjust the power controller from a central station according to whether the blockage is local or global.
17. A computer readable medium having stored therein a plurality of sequences of executable instructions, which, when executed by an optical communication system device for distinguishing between a local blockage and a global blockage, cause the device to:
 - a) detect a blockage of a pathway for an optical beam, and

- b) compare the amount of power of the optical beam collected by a target receiver station at the pathway with the amount of power of an optical beam collected by at least one reference receiver station in the optical communication system to determine if the blockage is global or local.
18. The computer readable medium of claim 17, further including additional sequences of executable instructions, which, when executed by the optical communication system device cause the device to increase or maintain the amount of power of the optical beam transmitted if the blockage is global.
19. The computer readable medium of claim 17, further including additional sequences of executable instructions, which, when executed by the optical communication system device cause the device to reduce or maintain the amount of power of the optical beam transmitted if the blockage is local.
20. The computer readable medium of claim 17, further including additional sequences of executable instructions, which, when executed by the optical communication system device cause the device to measure backscatter as an indication of a local or global blockage.

21. The computer readable medium of claim 20, further including additional sequences of executable instructions, which, when executed by the optical communication system device cause the device to distinguish backscatter from a local blockage and backscatter from a distributed scattering source along the pathway or from the target receiver station by the measured amount of backscatter.

22. A method for, the method comprising:

transmitting an optical beam carrying data into a wireless pathway to a target receiver station;

detecting an attenuation of the optical beam;

comparing the attenuation of the optical beam with an attenuation of another optical beam intended to be received by at least one reference receiver station in the network to determine a global blockage or local blockage of the pathway;

increasing the amount of power of the optical beam transmitted if there is a global blockage; and

reducing or maintaining the amount of power of the optical beam transmitted if there is a local blockage.

23. The method of claim 22, further including repeating the detecting of an attenuation and comparing the attenuation, and incrementally increasing the amount of power of the optical beam if there is no local blockage with each repetition, until the power reaches a network based optimal amount.
24. The method of claim 22, further including measuring backscatter as an indication of a local or global blockage.
25. The method of claim 24, wherein the transmitting an optical beam is by pulsing and further including detecting backscatter only during an extended period of time corresponding to backscatter from a global blockage.
26. The method of claim 24, further including distinguishing between backscatter from a local blockage and backscatter from a distributed scattering source along the pathway or from the target receiving station by the measured amount of backscatter.
27. The method of claim 24, wherein the transmitted optical beam is partially modulated to distinguish between backscatter and other light.

28. The method of claim 24, further including detecting an attenuation of another optical beam intended to be received by a reference receiver station native to the transmitter station, prior to the detecting of an attenuation of the optical beam.

29. The method of claim 24, wherein the comparing is by a central station and further including the central station sending instructions to the transmitter station or receiver station to adjust a system parameter according to whether the blockage is local or global.

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